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Eurosurveillance, Volume 9, Issue 9, 01 September 2004
Surveillance report
SURVEILLANCE DATA ON PAEDIATRIC HIV INFECTION AND AIDS IN GREECE

Citation style for this article: Nikolopoulos G, Konte V, Masgala A, Eleni E, Tsantes A, Paraskeva D. Surveillance data on paediatric HIV infection and AIDS in Greece. Euro Surveill. 2004;9(9):pii=477. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=477>

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In Greece, HIV/AIDS surveillance is conducted by the Hellenic Centre for Infectious Diseases Control. The AIDS case reporting system was implemented in 1984, followed by notification of HIV infections in 1998. This article presents surveillance and trend analysis of paediatric HIV infection and AIDS, including cases identified prior to 1998.

The number of HIV infected children in Greece is relatively low, raising to a cumulative total of 69 cases by June 2003, 44 (64%) of whom are thought to have been infected through mother-to-child transmission. Thirty three paediatric AIDS cases have been reported since the onset of epidemic, with *Pneumocystis carinii* pneumonia being the most frequent opportunistic infection.

A significant number of children in Greece were diagnosed after the age of 1 year. This could be attributed to the fact that many HIV-infected women are not identified during pregnancy, despite that fact that voluntary testing is available. It could also be attributed to the fact that data includes HIV infections collected retrospectively after 1998, and that foreign HIV-infected children may arrive in Greece at a later age. Furthermore, new paediatric HIV positive cases that were reported during the first half-year period of 2003 were foreign children born in eastern Europe and sub-Saharan Africa. Efforts should be made to identify women in these populations in time for proper intervention. HIV infection in children remains a huge problem worldwide, and it is very important to focus on reducing the risk of mother-to-child transmission.

Introduction

The global epidemic of HIV infection remains horrifying. An estimated 630 000 children acquired HIV infection in 2003 [1], most of them as a result of mother-to-child transmission, which continues to be an important public health issue.

This article presents the surveillance data on paediatric HIV infections and AIDS cases in Greece reported by 30 June 2003. Epidemiological data are essential for a better understanding of the dynamics of the epidemic and the impact of prevention programmes.

Methods

Surveillance of HIV infection in Greece is conducted by the Hellenic Centre for Infectious Diseases Control (HCIDC). Notification of HIV infections was implemented in Greece in 1998; AIDS case reporting was implemented in 1984. It is anonymous, confidential, and mandatory by law [2]. Cases of HIV infection identified prior to 1998 have also been retrospectively collected, for surveillance and trend analysis purposes. AIDS cases and new diagnoses of HIV infection in children (under 13 years old) are reported by reference centres, paediatric and obstetric clinics. Child case reporting is considered to be both complete and timely. The initial letters of the case's surname and first name and the date of birth are used as matching variables to eliminate duplication. The surveillance system is estimated to result in accurate case counts with duplicate and incorrectly matched case reports to be below 5%.

Diagnosis of HIV infection in children is based on the United States Centers for

Disease Control and Prevention Guidelines for National Human Immunodeficiency Virus case surveillance [3]. For all children 18 months or older, diagnosis of HIV infection, either by laboratories or clinical departments, should be based on a positive result on a screening test for HIV antibody (repeatedly reactive enzyme immunoassay), followed by a positive result on a confirmatory test for HIV antibody (western blot) or a positive result or report of a detectable quantity on an HIV virological test (HIV nucleid acid detection, HIV p24 antigen test including neutralisation assay, HIV isolation). For children up to 18 months or younger, reportable HIV cases should meet the laboratory criteria (positive results on two separate specimens, excluding cord blood, using one or more of the following HIV virological tests: HIV nucleid acid detection, HIV p24 antigen test, including neutralisation assay, in a child aged 1 month or older, HIV isolation). For children, the AIDS case definition is the European case definition [4].

Data are analysed by the HCIDC's HIV Infection Office.

Results

Since the beginning of the epidemic, 69 HIV infected children have been registered in our database. Of these, 44 (63.77%) were boys and 24 (34.78%) were girls, while for one case the sex was not reported. In total, 20 (28.99%) children were identified during the first year of life, 24 (34.78%) between 1-4 years old, 13 (18.84%) at the age of 5-9 years and 12 (17.39%) were aged 10 years or older [TABLE 1]. Fifty three children (76.81%) were of Greek nationality, 7 (10.14%) were born in sub-Saharan Africa. Two new paediatric HIV cases were reported during first half-year period of 2003. One of the children was born in eastern Europe and the other in sub-Saharan Africa.

TABLE 1
Cumulative paediatric HIV positive cases by age group at diagnosis, and sex, reported in Greece by 30 June 2003

Age group	Males		Females		Total*	
	N	(%)	N	(%)	N	(%)
0-11 months	12	(27.27)	7	(29.16)	20	(28.99)
1-4 years old	13	(29.54)	11	(45.83)	24	(34.78)
5-9 years old	8	(18.18)	5	(20.83)	13	(18.84)
10-12 years old	11	(25.00)	1	(4.16)	12	(17.39)
Total*	44	(100)	24	(100)	69	(100)

* including cases of unknown sex

Most children (63.76%) were infected through mother-to-child transmission, 18.84% had haemophilia and for 8.70% the route of transmission was blood transfusion [TABLE 2]. HIV trends by transmission group shows that HIV infection in children is primarily vertically acquired. Most of cases in haemophiliac children and transfusion recipients were infected during the early years of the epidemic. Of the cases classified as undetermined, a high proportion of these in recent years are so because reports are based on a laboratory surveillance system, with, therefore, little information available.

TABLE 2
Cumulative paediatric HIV positive cases by transmission group and sex, reported in Greece by 30 June 2003

Transmission group	Males		Females		Total*	
	N	(%)	N	(%)	N	(%)
Haemophiliac children/ Coagulation disorder	13	(29.50)	0	(0.00)	13	(18.84)
Transfusion recipients	3	(6.80)	3	(12.50)	6	(8.70)
Mother-to-child	23	(52.30)	20	(83.33)	44	(63.76)
Undetermined	5	(11.40)	1	(4.17)	6	(8.70)
Total*	44	(100)	24	(100)	69	(100)

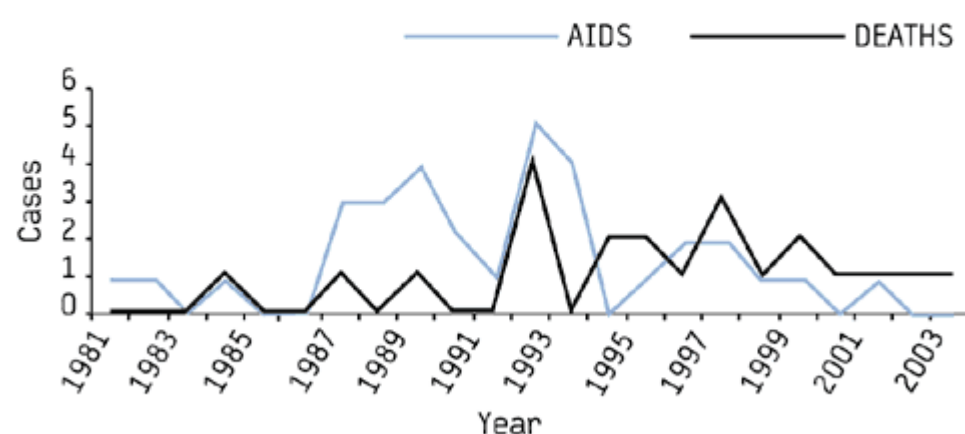
* including cases of unknown sex

Among the 44 cases of vertically acquired HIV infection, the majority of mothers (38.63%) were exposed to the HIV virus through heterosexual contact, but the transmission mode of the mother remains unknown for 41% of cases. The total number of paediatric AIDS cases is 33 (20 boys and 13 girls). Most of the patients (60.6%) were infected through mother-to-child transmission.

the patients (60.6%) were infected through mother-to-child transmission, 33.3% had haemophilia or were transfusion recipients (6.1%). AIDS trend analysis shows that the number of cases progressing to AIDS has been lower in recent years and no new paediatric AIDS case has been reported since 2001. The number of deaths in paediatric AIDS cases has been dropped to one annually since 2000 [FIGURE]. In terms of AIDS defining conditions in children, the most frequent are *pneumocystis carinii* pneumonia (PCP) (12%), HIV dementia (12%) and Cytomegalovirus disease (12%).

FIGURE

Paediatric AIDS cases by year of diagnosis and deaths among AIDS cases by year of death reported in Greece by 30 June 2003



Discussion

New HIV diagnoses in Greece are considered low compared with other countries in western Europe. In 2002, the HIV reporting rate in western Europe was 76.1 new HIV diagnoses per million population overall, while in Greece the rate was 37.9 [5]. In the entire WHO European Region, 13 603 persons were reported to be infected through mother-to-child transmission by 30 June 2003: only 44 cases were from Greece [5]. As mother-to-child transmission is the main route of transmission for children under 13 years old, the low number of HIV infected children in Greece is probably due to the low number of HIV infected women (1242 females versus 5241 males) [2]. In a study sponsored by HCIDC and conducted by the National School of Public Health in 1999-2000, it was found that the prevalence of HIV infection among pregnant women in Athens was 13 per 10 000. The number is considered low compared to other European urban areas such as London (24.83 per 10 000) for which data were available for the same time period [6]. Haemophilic patients and transfusion recipients were infected in the early years of the epidemic since blood supplies were not tested for HIV antibodies until 1985.

It has been recommended that screening tests for HIV infection are offered to pregnant women in Greece during the first trimester of pregnancy on an 'opt-out' basis, but this is not always done at present. Highly active antiretroviral therapy (HAART), which is free of charge; modification of obstetric practices such as elective caesarean section; and avoidance of breastfeeding: all these are affordable for all known HIV positive pregnant women in Greece. All infected women also have free access to antiretroviral drugs during pregnancy. However as in all resource-rich countries, a number of infected women are not promptly identified despite the counselling and voluntary testing available in antenatal clinics [7]. This could partly explain the significant number of children in Greece who were diagnosed after the age of 1 year. The migration to Greece of foreign patients at an older age, as well as the retrospective collection of data after the implementation of HIV case reporting, are, however, factors that exerted influence on the distribution of cases by age. Our database does not record which of these paediatric HIV cases in Greece reflect screening or prophylaxis failure, and so our data could not supply answers to this question that would allow a better allocation of resources.

As regards paediatric AIDS cases and deaths, the numbers are very low. In terms of AIDS-defining conditions, it seems that PCP is the most frequent opportunistic infection in children.

It is noteworthy that the new paediatric HIV positive cases reported during the first half-year period of 2003 in Greece were in foreign children born in eastern Europe and sub-Saharan Africa. Furthermore, 10% of paediatric HIV cases in Greece in children were from sub-Saharan Africa. It seems, then, that the national redistribution of immigrant and refugee families have a great impact on the HIV trend worldwide [8]. Greece is the final destination for many immigrants, and the number of people moving to Greece has increased dramatically during the past decade. More efforts should therefore be made to identify the women in these populations in time for proper intervention to be made.

HIV infection in children remains a huge problem. As paediatric HIV infection reporting in Greece is part of the National Surveillance System, further studies including obstetric data on demographic information, timing of maternal diagnosis and HIV infection status, uptake of interventions, outcome of pregnancy, avoidance of breastfeeding and paediatric data on neonatal details are necessary.

Acknowledgements

We wish to thank all clinicians, biologists and health professionals who make data collection possible.

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